IVAR JACOBSON
INTERNATIONAL

Creating **winning** teams.

50 years of Software Engineering, so now what?

Ivar Jacobson

What is Software Development Really?

- Is it an Engineering Discipline or
- Is it a Craft?

The Answer is of course that it is both.

More of a Craft than an Engineering Discipline

AGENDA

1. How mature are we? ☺
2. What we need to do
3. What we get
4. What we do
5. Take aways

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

ARE WE DRIVEN BY FASHION?

2000s

2010s

1990s

Today?

1980s

Future?

1970s

- The first published methods separated functions from data
- 25 years ago it was all about OO
- 20 years ago it was about components, UML, Unified Process (RUP)
- 15 years ago it was about CMMI
- Then we got Agile (XP, Scrum, Lean, Kanban, and more)
- Now it is Scaling Agile (SAFe, DAD, LeSS, Nexus)
- Tomorrow ???

All had/have something good –
so that is not the problem

IVAR JACOBSON
INTERNATIONAL

Creating **winning** teams.

ARE WE DRIVEN BY FASHION?

2000s

2010s

1990s

Today?

1980s

Future?

1970s

- The first published methods separated functions from data
- 25 years ago it was all about OO
- 20 years ago it was about components, UML, Unified Process (RUP)
- 15 years ago it was about CMMI
- Then we got Agile (XP, Scrum, Lean, Kanban, and more)
- Now it is Scaling Agile (SAFe, DAD, LeSS, Nexus)
- Tomorrow ???

So What are the Problems?

IVAR JACOBSON
INTERNATIONAL

6

Creating winning teams.

SO WHAT ARE THE **PROBLEMS** – HERE ARE SOME

PROBLEMS

| We are in a **methods war** since 50 years | Practices are locked in **method prisons** | Method prisons are controlled by method **gurus** | All methods are **mono-lithic** | Every method's description is **home-grown** | Methods have **no common ground** |

This is immature and foolish!!!

IVAR JACOBSON
INTERNATIONAL

Creating **winning** teams.

AGENDA

1. How mature are we? ☺
2. What we need to do
3. What we get
4. What we do
5. Take aways

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

HOW DO WE STOP THIS FOOLISHNESS?

PROBLEMS

We are in a **methods war** since 50 years	Practices are locked in **method prisons**	Method prisons are controlled by method **gurus**	All methods are **mono-lithic**	Every method's description is **home-grown**	Methods have **no common ground**

Supported by all THREE solutions

SOLUTIONS

❸ **Free the Practices** from their methods

❷ **Modularize** the Methods

❶ Discover a **standard Common Ground**

IVAR JACOBSON INTERNATIONAL
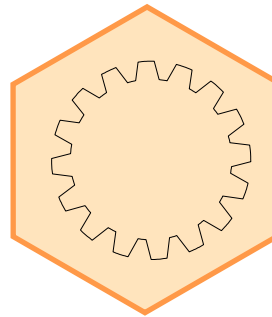
Creating **winning** teams.

DISCOVER A STANDARD COMMON GROUND

For the first time in the 60+ year history of software engineering, we have got a Common Ground (in 2014)

Essence = **Kernel** + **Language**
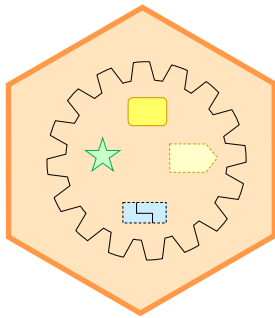
THE COMMON GROUND
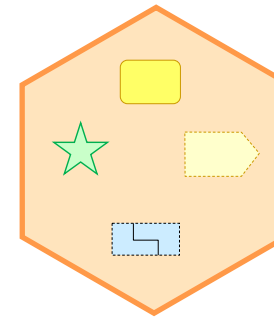
- Essential Things to Work with
- Essential Things to Do
- The Essential Competencies you need

- Visual language
- Simple
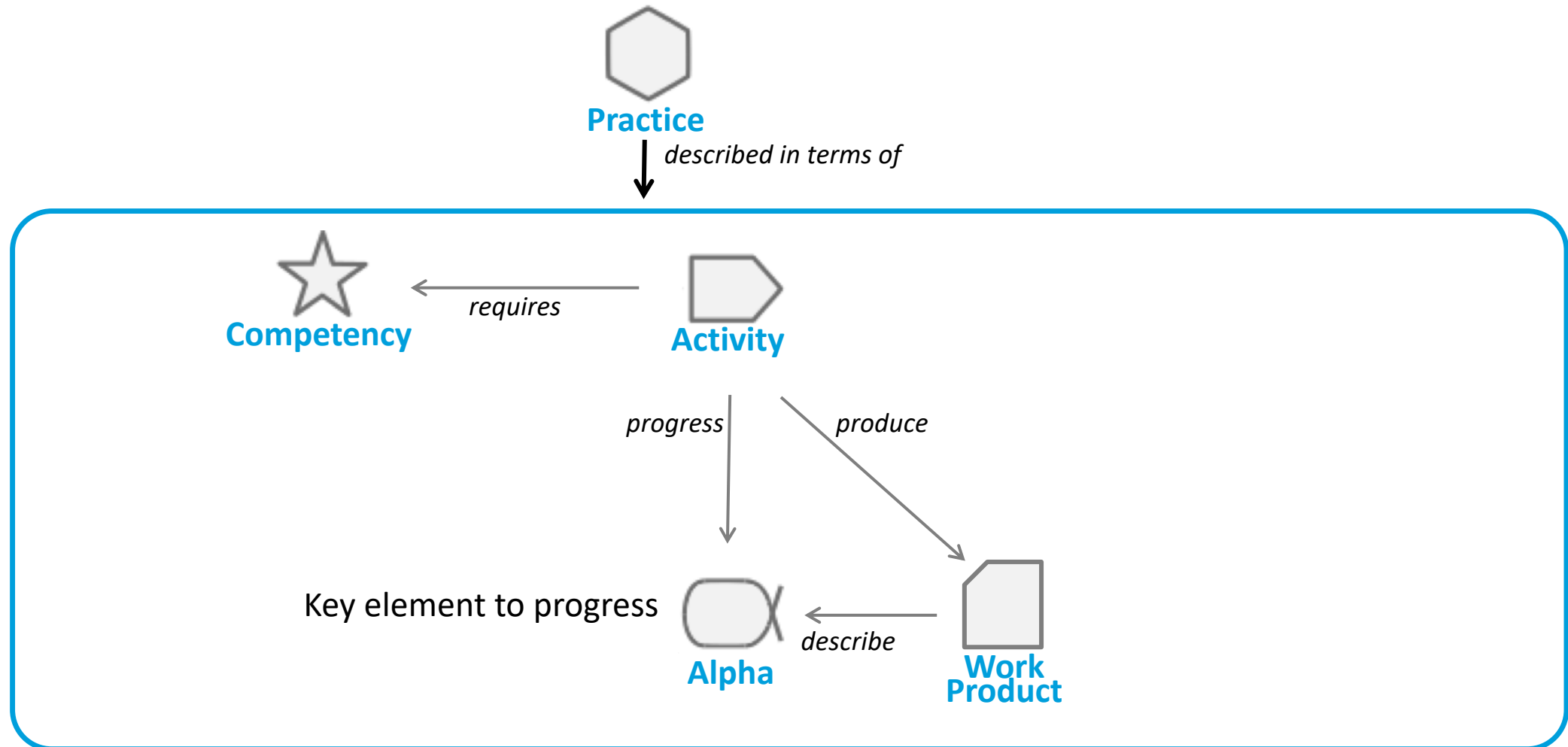- Intuitive

OMG
WE SET THE STANDARD®

IVAR JACOBSON INTERNATIONAL

Creating **winning** teams.

THE ESSENCE LANGUAGE

Practice

described in terms of

Competency ← *requires* — Activity

progress

produce

Key element to progress

Alpha ← *describe* — Work Product

THE ESSENCE KERNEL

The Alphas: The Most Important Things

- There are **customer** needs to be met
  - Someone has a problem or **Opportunity** to address
  - There are other **Stakeholders** who will fund, use and benefit from the solution produced

- There is a **solution** to be delivered
  - There are certain **Requirements** to be met
  - There'll be a **Software System** to develop

- There is an **endeavor** to be undertaken
  - We need to kick off the **Work** ...
  - Build an empowered **Team** of good people ...
  - With a good, responsive **Way of Working**

Customer

Opportunity   Stakeholders

Solution

Requirements   Software System

Endeavor

Work   Team

Way of Working
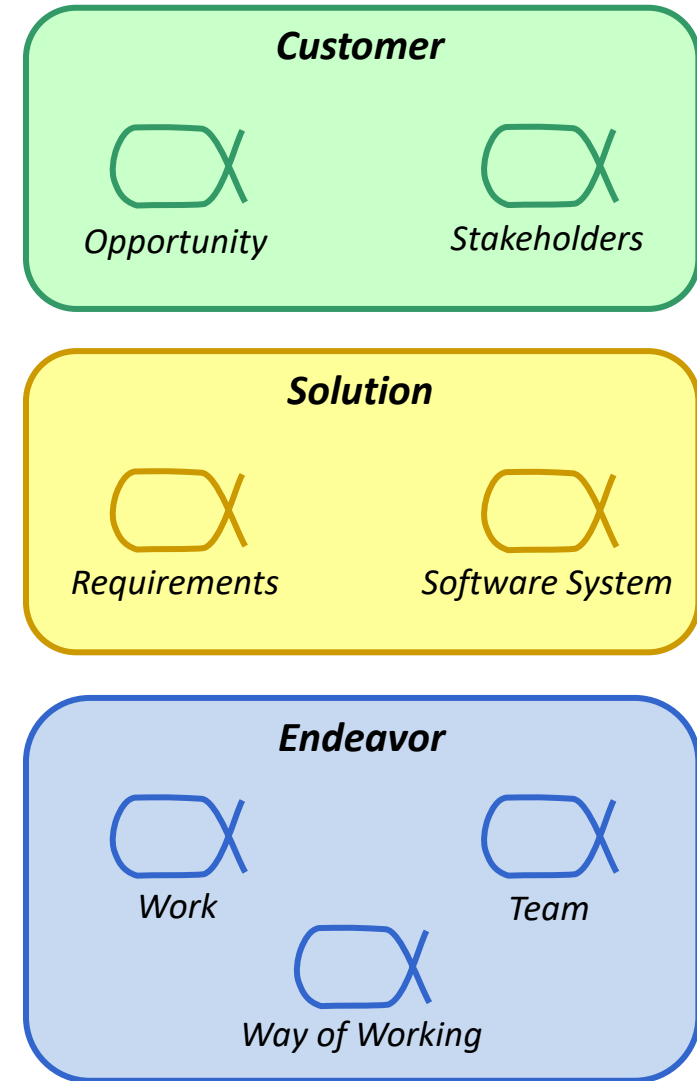
ALPHAS HAVE STATES AND CARDS

Opportunity

The set of circumstances that makes it appropriate to develop or change a software system.

- Identified
- Solution Needed
- Value Established
- Viable
- Addressed
- Benefit Accrued

IVAR JACOBSON
INTERNATIONAL
Generated by IJI Practice Workbench™

1.1.2

Software System

A system made up of software, hardware, and data that provides its primary value by the execution of the software.

- Architecture Selected
- Demonstrable
- Usable
- Ready
- Operational
- Retired

IVAR JACOBSON
INTERNATIONAL
Generated by IJI Practice Workbench™

1.1.2

The cards allow us to play many serious games

Quote from: "The Lean Machine: How Harley Davidson Drove Top-Line Growth and Profitability with Revolutionary Lean Product Development" by Dantar P. Oosterwal

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

ALPHA STATES HAVE CHECKLISTS

Opportunity — Identified (1 / 6)
- ☐ Idea behind opportunity identified
- ☐ At least one investing stakeholder interested
- ☐ Other stakeholders identified

Opportunity — Solution Needed
- ☐ Solution identified
- ☐ Stakeholders' needs established
- ☐ Problems and root causes identified
- ☐ Need for a solution confirmed
- ☐ At least one solution proposed

Opportunity — Value Established
- ☐ Opportunity value quantified
- ☐ Solution impact understood
- ☐ System value understood
- ☐ Success criteria clear
- ☐ Outcomes clear and quantified

Opportunity — Viable (4 / 6)
- ☐ Solution outlined
- ☐ Solution possible within constraints
- ☐ Risks acceptable & manageable
- ☐ Solution profitable
- ☐ Reasons to develop solution understood
- ☐ Pursuit viable

Opportunity — Addressed (5 / 6)
- ☐ Opportunity addressed
- ☐ Solution worth deploying
- ☐ Stakeholders satisfied

Opportunity — Benefit Accrued (6 / 6)
- ☐ Solution accrues benefits
- ☐ ROI acceptable

The checks measure real outcome, not activities done or documents produced

IVAR JACOBSON INTERNATIONAL

Creating winning teams.

2 MODULARIZE THE METHODS

Essentialized Methods — Methods like SAFe, DAD, SPS, LeSS, etc.

uses

Essentialized Practices — **Generic practices**: Scrum, User Story, Use Cases, etc.
Specific practices: Practices from SAFe, DAD, Nexus, LeSS, etc. – All in a practice eco-system

uses

The Essence Kernel

uses

The Essence Language — **The Essence Common Ground**

IVAR JACOBSON INTERNATIONAL

Creating **winning** teams.

THUS THIS IS AN ESSENTIALIZED METHOD
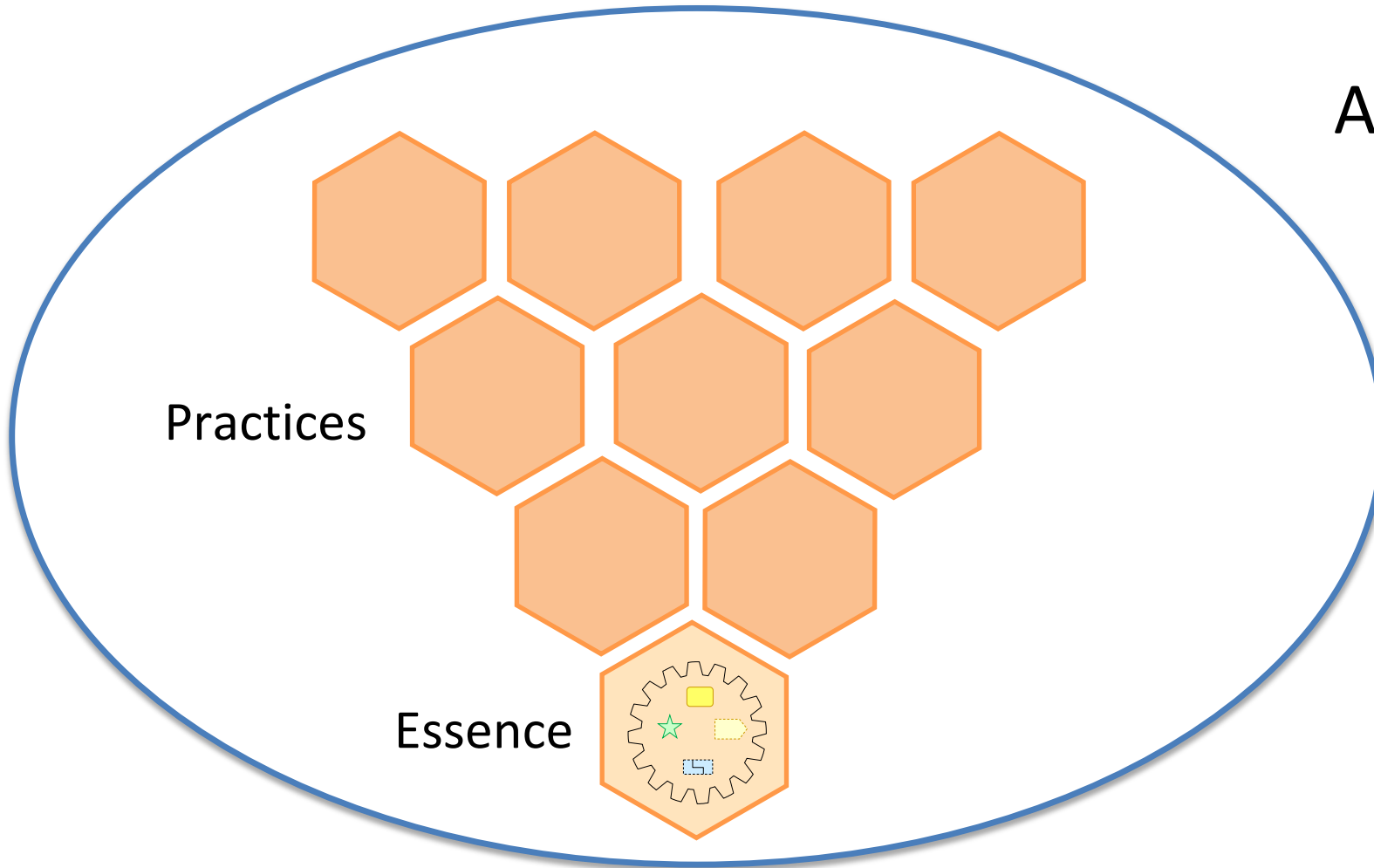
A Method

Practices

Essence

Essence makes Methods Modular – not Monolithic

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

Imagine a Practice Ecosystem

Your Existing Practices

Nexus

SAFe

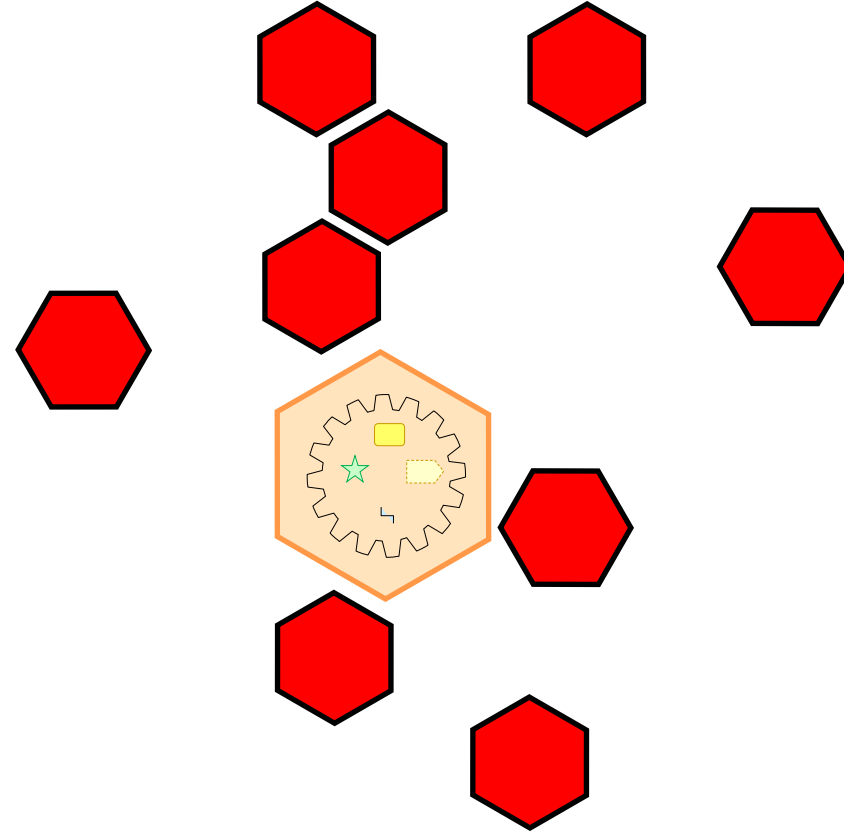Disciplined Agile Delivery
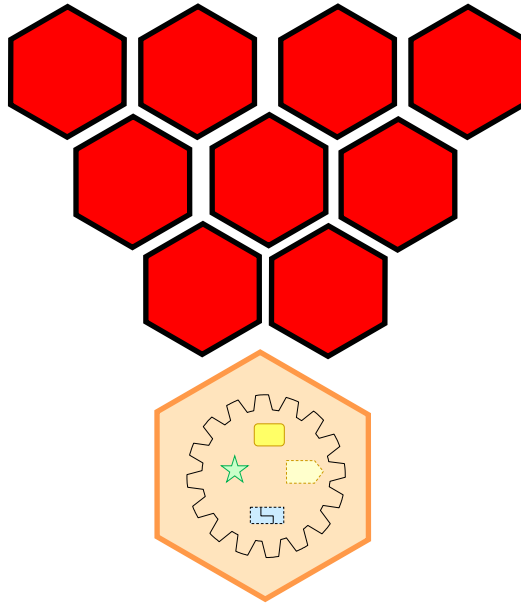
IVAR JACOBSON INTERNATIONAL

Creating winning teams.
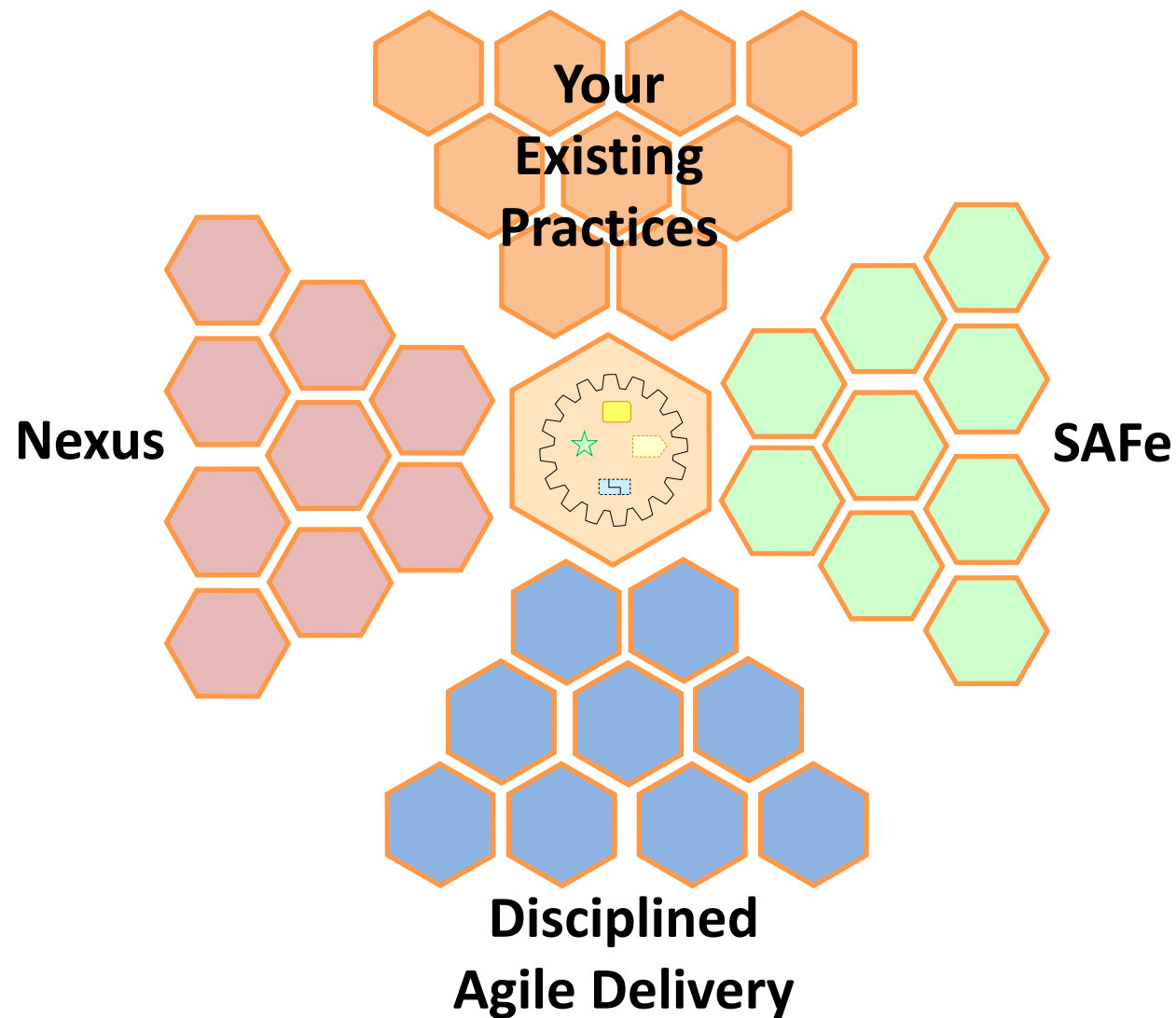
YOU SELECT THE PRACTICES YOU LIKE
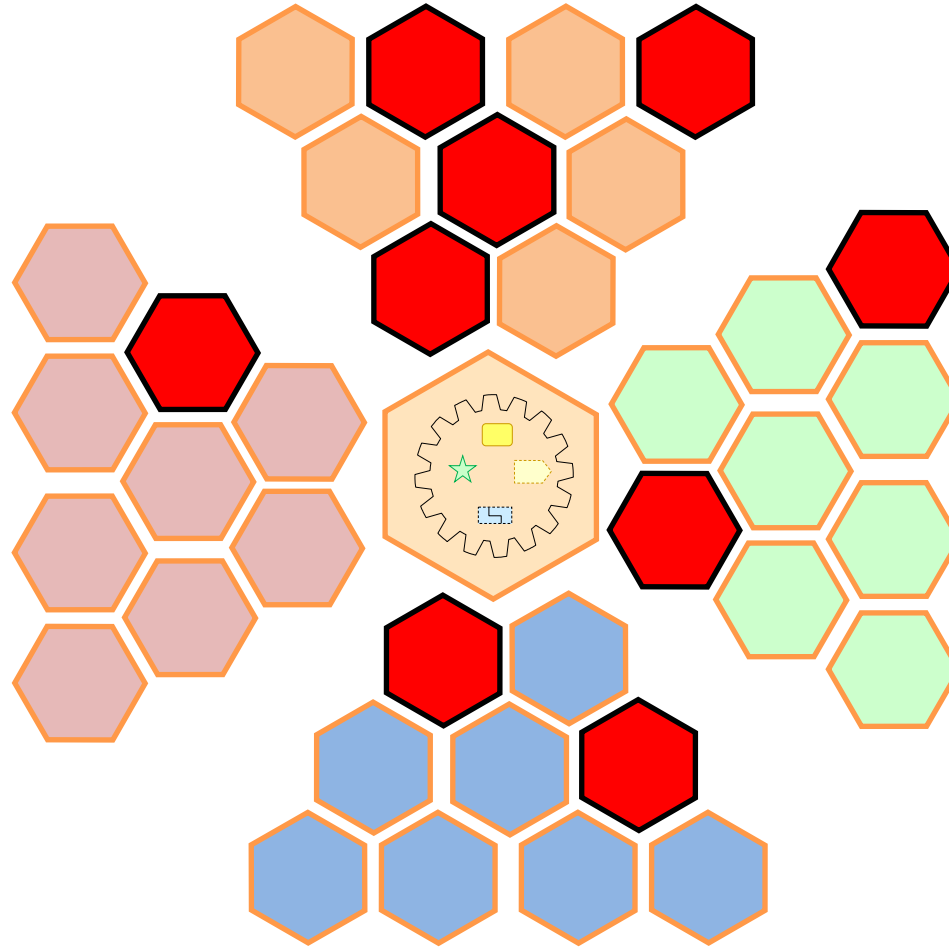
IGNORE THE ONES YOU DON'T NEED

YOU CREATE YOUR OWN METHOD

...mixing and matching practices to create your own method

IVAR JACOBSON INTERNATIONAL

Creating winning teams.

AGENDA

1. How mature are we? ☺
2. What we need to do
3. What we get
4. What we do
5. Then what more?

IVAR JACOBSON
INTERNATIONAL

Creating **winning** teams.

Industry - Value Proposition

1. Every team can select their own preferred method

2. Progress and health of projects are measurable in a method agnostic way

3. All developers speak the same language independent on which methods they use

4. Your organization is forever learning

5. Your organization moves from primarily being a craft to primarily being an engineering discipline

Academic- Value Proposition

1. Students learn what is generic to all methods, not just specific methods

2. Students can learn specific methods based on a common ground so they can compare methods on a detailed level

3. Students learn game playing in software development

4. Researchers have got a standard model of software engineering to build upon

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

AGENDA

1. How mature are we? ☺
2. What we need to do
3. What we get
4. What we do
5. Then what more?

IVAR JACOBSON
INTERNATIONAL

Creating **winning** teams.

INDUSTRIAL WORLD

- Fujitsu UK and Munich Re have been using Essence for many years
- Several of the largest and most prestigious service companies are on a path to essentialization
  - Tata Consulting Services (TCS) say they have essentialized all their methods.
  - RedHat is using Essence for consulting engagements and are now scaling up to other areas.
  - Etc.
- Jeff Sutherland has essentialized Scrum
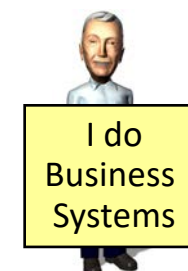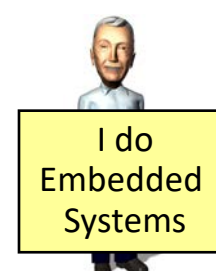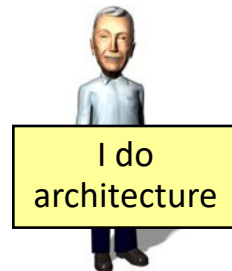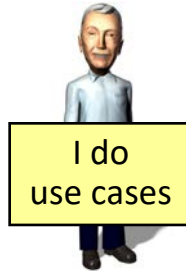- Scott Ambler is essentializing DAD

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

ACADEMIC WORLD

- Quote by Prof Pekka Abrahamsson, NUST: "…we have successfully taught Essence in Software Engineering course to 460 students… We have finally moved beyond Scrum and Kanban…my Software Engineering education in the future will be driven by Essence."

- More than 10 universities around the world are already teaching Essence.

- A project 'Software Engineering Essentialized' for first year students started two years ago. About 25 professors from around the world are actively involved to create a new way to teach software engineering

IVAR JACOBSON INTERNATIONAL

Creating winning teams.

AGENDA

1. How mature are we? ☺
2. What we need to do
3. What we get
4. What we do
5. Then what more?

IVAR JACOBSON
INTERNATIONAL

Creating winning teams.

Codified Practices are the Beginnings of Smart Practices

I do
use cases

I do
architecture

I do
Iterative
planning

I do
Embedded
Systems

I do
Business
Systems

Virtual Pair
- Programmers
- Analysts
- Designer
- Tester
- Project Managers

Active Guidance
provides expert advice just when needed
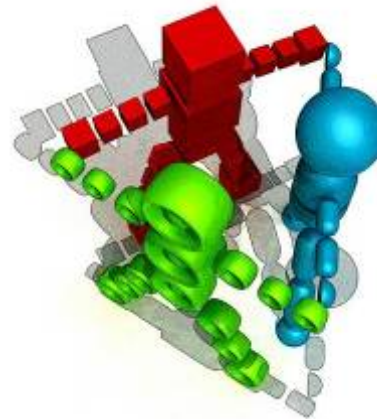
Active Review
monitors status, progress and quality (individual/mgmt)

Active Automation
delegates mundane tasks

Finally we are AI ready

IVAR JACOBSON INTERNATIONAL

Creating winning teams.

WELCOME TO THE FUTURE
Get Started!